

## 2A, 20V - 200V Schottky Barrier Rectifier

### FEATURES

- AEC-Q101 qualified available
- Low forward voltage drop
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converter

### MECHANICAL DATA

- Case: DO-204AC (DO-15)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.400g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	2	A
$V_{RRM}$	20 - 200	V
$I_{FSM}$	50	A
$T_{JMAX}$	125, 150	°C
Package	DO-204AC (DO-15)	
Configuration	Single die	



DO-204AC (DO-15)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SR 202	SR 203	SR 204	SR 205	SR 206	SR 209	SR 210	SR 215	SR 220	UNIT
Marking code on the device		SR 202	SR 203	SR 204	SR 205	SR 206	SR 209	SR 210	SR 215	SR 220	
Repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	90	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	140	V
Forward current	$I_F$	2									A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	50									A
Critical rate of rise of off-state voltage	dv/dt	10,000									V/ $\mu\text{s}$
Junction temperature	$T_J$	-55 to +125				-55 to +150					°C
Storage temperature	$T_{STG}$	-55 to +150									°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	21.7	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	75.0	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	14.0	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>	
Forward voltage <sup>(1)</sup>	SR202 SR203 SR204	$I_F = 2\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V	
	SR205 SR206			-	0.70	V	
	SR209 SR210			-	0.85	V	
	SR215 SR220			-	0.95	V	
Reverse current @ rated $V_R$ <sup>(2)</sup>	SR202 SR203 SR204 SR205 SR206	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$	
	SR209 SR210 SR215 SR220	$T_J = 100^\circ\text{C}$		-	100	$\mu\text{A}$	
	SR202 SR203 SR204			$T_J = 125^\circ\text{C}$	-	10	mA
	SR205 SR206				-	5	mA
	SR209 SR210 SR215 SR220	-			-	mA	
	SR202 SR203 SR204	$T_J = 125^\circ\text{C}$		-	-	mA	
	SR205 SR206			-	-	mA	
	SR209 SR210 SR215 SR220			-	2	mA	

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE<sup>(1)(2)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
SR2x	DO-204AC (DO-15)	3,500 / Tape & Reel
SR2x A0G	DO-204AC (DO-15)	1,500 / Ammo box
SR2xH	DO-204AC (DO-15)	3,500 / Tape & Reel
SR2xHA0G	DO-204AC (DO-15)	1,500 / Ammo box

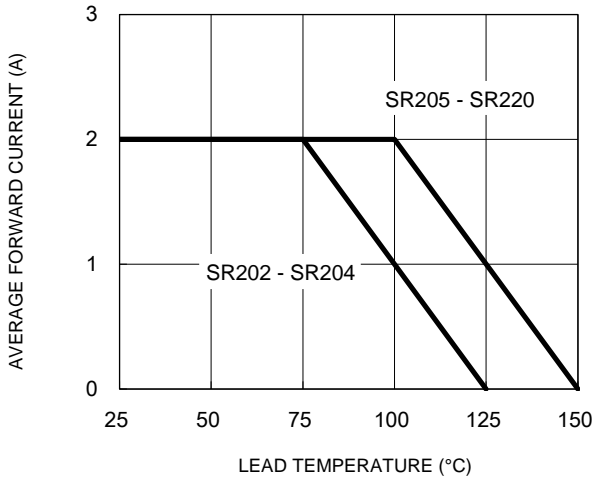
**Notes:**

1. "x" defines voltage from 20V (SR202) to 200V (SR220)
2. "H" means AEC-Q101 qualified

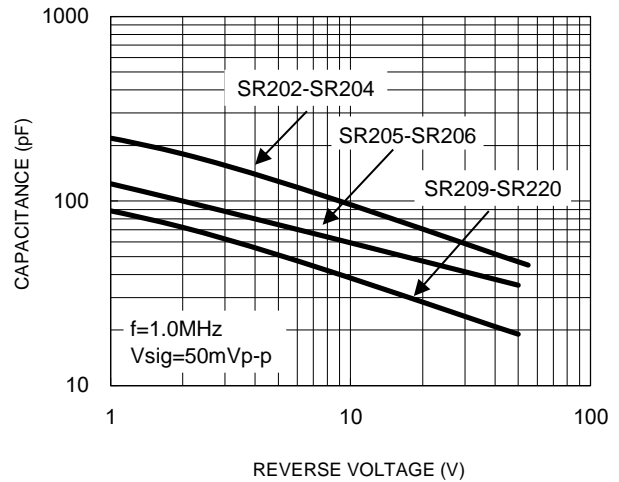
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

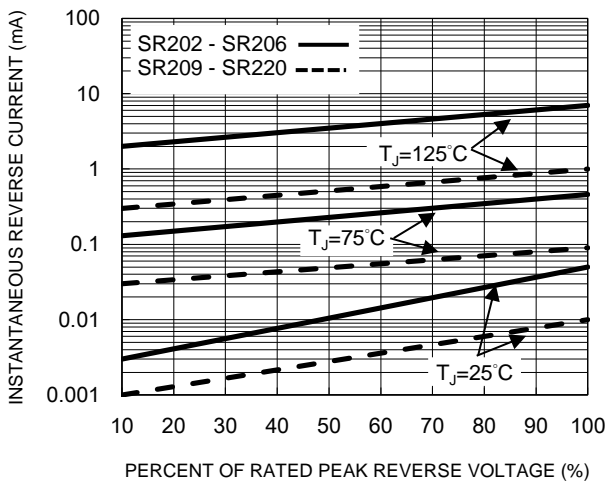
**Fig.1 Forward Current Derating Curve**



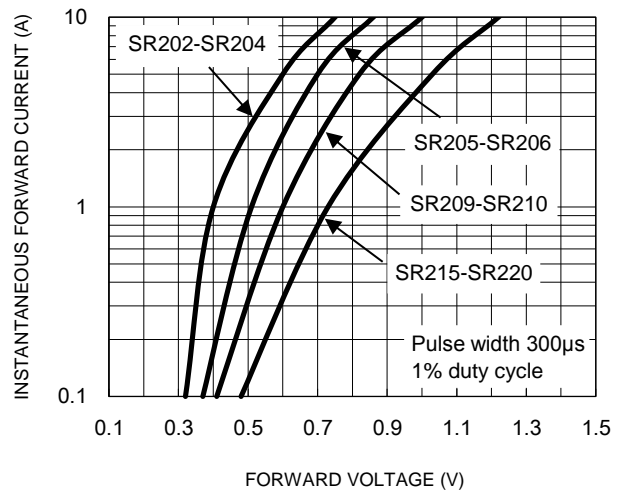
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



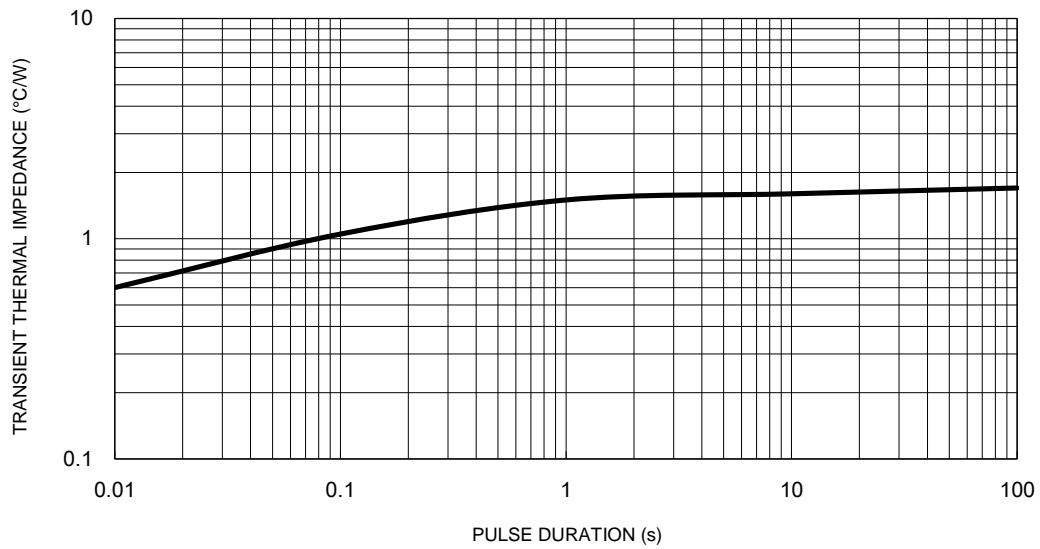
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

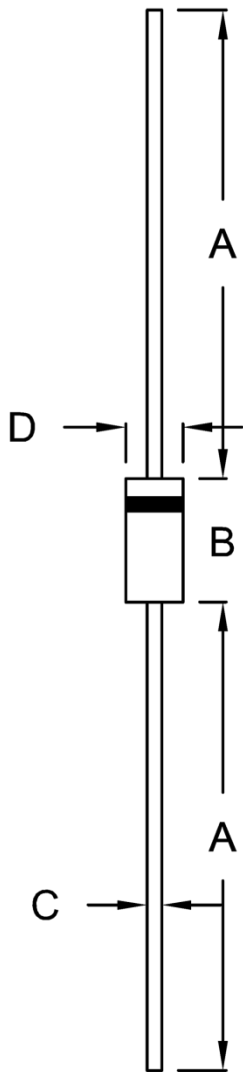
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Characteristics**



**PACKAGE OUTLINE DIMENSIONS**

DO-204AC (DO-15)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	5.80	7.60	0.228	0.299
C	0.70	0.90	0.028	0.035
D	2.60	3.60	0.102	0.142

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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